REMARKS

Applicants' thank the Examiner for the indication of allowable subject matter in the present application specifically, Claims 7, 8, 14, 15, and 18-27. This amendment amends Claim 1, 14, 19, 20, 21, 22, 26, 30, and 35, and cancels Claim 18. Now in the application are Claims 1-17 and 19-38 of which Claims 1, 30, and 35 are independent. Applicants' contend that Claims 1-17 and 19-38, as amended, are patentable and in condition for allowance as discussed below.

Amendments to Claims 14, 19, 20, 21, 22 and 26:

Applicants' note the amendment to Claim 14 is not based on any art rejection and is meant to correct a typographical error. Applicants' further note that the amendments to Claims 19, 20, 21, 22, and 26 are not directed to any art rejection, but rather are directed to correct claim dependency upon cancellation of Claim 18.

Claim Rejections under 35 U.S.C. § 102

The Office Action rejects Claims 30, 31, 35, 36, and 38 as being anticipated by U.S. Patent No. 6,542,846 of Miller, *et al.* (hereinafter "Miller"). Applicants' respectfully traverse these rejections on the basis of the following amendments and above amendments and further contend that Miller fails to disclose all elements of these claims, as amended, and as described below, and hence, does not anticipate the claimed invention.

For purposes of clarity in the discussion below, the respective claim rejections under 35 U.S.C. § 102 are discussed separately.

A. Rejection of Claims 30 and 31 under 35 U.S.C. § 102(e):

The Office Action rejects Claims 30 and 31 as being anticipated by Miller. Applicants' respectfully traverse this rejection on the basis of the above amendments and the following arguments, and further contend that Miller fails to disclose all elements of these claims, as described below and does not anticipate the claimed invention.

Claim 31 depends from ameneded Claim 30, and thereby incorporates the novel features of amended Claim 30.

Miller describes a thermal management system for a portable ultrasound imaging device. The thermal management system of Miller includes a number of temperature sensors, preferably thermistors to monitor respective temperatures of the components forming the portable ultrasound imaging device. A thermal management controller periodically polls the temperature sensors during operation of the ultrasound system according to a software polling routine stored in the thermal management controller. The thermal management system of Miller monitors the respective temperatures of various system components, for example, a battery, a fan, a package surface of an integrated circuit, and, based on the monitored temperatures, performs control to cool the ultrasound system to maintain an external casing temperature below safety regulated temperatures. In this manner, a patients' safety is maintained so that the external surface temperature of the imaging device does not exceed 50°C.

Amended Claim 30 recites a controller for monitoring *die temperatures* of an integrated circuit. The controller includes means for receiving a plurality of first values representative of a plurality of *die temperatures* of the integrated circuit. The controller further includes means for comparing the plurality of first values to a plurality of corresponding second values representative of a plurality of threshold values and includes means for determining whether an over temperature condition of the integrated circuit exists based on an output of the means for comparing.

The thermal management system disclosed by Miller does not anticipate amended Claim 30. Miller does not disclose a controller for monitoring *die temperatures* of an integrated circuit. Miller is concerned with heat generated by ultrasound system circuitry and an associated rechargeable battery to, in part, prevent the casing external surface temperature of the imaging device from increasing beyond the temperature mandated by medical safety regulations.

Miller is not concerned with monitoring *die temperatures* of an integrated circuit. Miller is concerned with the amount of heat dissipated by an integrated circuit into an enclosed ultrasound device to avoid injury to a patent. Nevertheless, the integrated circuit temperature monitored and controlled by the system of Miller is a single external case or package temperature of an integrated circuit and not a *die temperature* of the integrated circuit. The temperature measured by the thermister of Miller provides no indication of uneven heating of a die packaged in an integrated circuit and, as such,

provides no indication of high temperature die locations, or "hot spots" corresponding to die locations experiencing, for example, a high workload.

In contrast, amended Claim 30 recites a controller for monitoring *die temperatures* of an integrated circuit. The controller of amended Claim 31 provides a significant benefit over the thermal system disclosed in Miller. The claimed controller monitors *die temperatures* of an integrated circuit and as such, is able to manage and control die "hot spots". The thermal system of Miller can not. Miller fails to disclose a controller as recited in amended Claim 31. Consequently, Miller does not anticipate amended Claim 31. Accordingly, Applicants' respectively urge the Examiner to reconsider and withdraw the rejection of amended Claim 30 and Claim 31 under 35 U.S.C. § 102.

B. Rejection of Claims 35, 36, and 38 under 35 U.S.C. § 102(e):

The Office Action rejects Claims 35, 36, and 38 as being anticipated by Miller. Applicants' respectfully traverse this rejection on the basis of the above arguments and the following arguments, and further contend that Miller fails to disclose all elements of these claims, as described below and does not anticipate the claimed invention.

Claims 36 and 38 depend from amended Claim 35, and thereby incorporate the novel features of amended Claim 35.

Miller describes a thermal management system for a portable ultrasound imaging device. The thermal management system of Miller includes a number of temperature sensors, preferably thermistors to monitor respective temperatures of the components forming the portable ultrasound imaging device. A thermal management controller periodically polls the temperature sensors during operation of the ultrasound system according to a software polling routine stored in the thermal management controller. The thermal management system of Miller monitors the respective temperatures of various system components, for example, a battery, a fan, a package surface of an integrated circuit, and, based on the monitored temperatures, performs control to cool the ultrasound system to maintain an external casing temperature below safety regulated temperatures. In this manner, a patients' safety is maintained so that the external surface temperature of the imaging device does not exceed 50°C.

Amended Claim 35 recites a method for monitoring *die temperatures* of an integrated circuit. The method includes an act of receiving a plurality of first values representative of a plurality of *die temperatures* of the integrated circuit. The method further includes acts of comparing the plurality of first values to a plurality of corresponding second values representative of a plurality of threshold values and determining whether an over temperature condition of the integrated circuit exists based on an output of the means for comparing.

The thermal management system disclosed by Miller does not anticipate amended Claim 35. Miller does not disclose a method for monitoring *die temperatures* of an integrated circuit. Miller is concerned with heat generated by ultrasound system circuitry and an associated rechargeable battery to, in part, prevent the casing external surface temperature of the imaging device from increasing beyond the temperature mandated by medical safety regulations.

Miller is not concerned with monitoring *die temperatures* of an integrated circuit. Miller is concerned with the amount of heat dissipated by an integrated circuit into an enclosed ultrasound device to avoid injury to a patent. As such, the temperature monitored and controlled by the system of Miller is an external package temperature of an integrated circuit and not a *die temperature* of the integrated circuit. As such, the temperature measured by the thermister of Miller provides no indication of uneven heating of a die packaged in an integrated circuit and, as such, provides no indication of high die temperature locations, or "hot spots" corresponding to die locations experiencing, for example, a high workload.

In contrast, amended Claim 35 recites a method for monitoring *die temperatures* of an integrated circuit. The method of amended Claim 35 provides a significant benefit over the thermal system disclosed in Miller. The claimed method monitors *die temperatures* of an integrated circuit and as such, enables management and control die "hot spots". The thermal system of Miller can not. Miller fails to disclose a method controller as recited in amended Claim 35. Consequently, Miller does not anticipate amended Claim 35 and Claims 36 and 38. Accordingly, Applicants' respectively urge the Examiner to reconsider and withdraw the rejection of amended Claim 35 and Claim 36 and 38 under 35 U.S.C. § 102.

Claim Rejections under 35 U.S.C. § 103

Claims 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 16, 17, 28, 29, 32 and 37 stand rejected under 35 U.S.C. § 103. For clarity in the discussion below, each respective claim set is discussed separately.

C. Rejection of Claim under 35 U.S.C. § 103(a):

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of U.S. Published Application No. 2001/0021217 of Gunther, *et al.* (hereinafter "Gunther"). Applicnts' respectfully traverse this rejection on the basis of the following arguments and above amendments.

Amended Claim 1 recites the allowable subject matter identified by the Examiner in original Claim 18. As such, Miller in view of Gunther does not teach or suggest the subject matter recited in amended Claim 1. Accordingly, Applicants' respectfully request the Examiner to reconsider and withdraw the rejection of Claim 1 under 35 U.S.C. § 103(a).

D. Rejection of Claims 2-5, 9, 11, 13, and 16 under 35 U.S.C. § 103(a):

Claims 2-5, 9, 11, 13 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Gunther and further in view of U.S. Patent No. 6,098,030 of McMinn (hereinafter "McMinn").

Applicants' respectfully traverse this rejection in light of the above amendments and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) for the following reasons.

Amended Claim 1 recites the allowable subject matter identified by the Examiner in original Claim 18. Claims 2-5, 9, 11, 13, and 16 depend, either directly or indirectly, from amended Claim 1, and thus incorporate the allowable subject matter of amended Claim 1. As such, Miller in view of Gunther and further in view of McMinn does not teach or suggest the subject matter recited in amended Claim 1 and hence the subject matter recited in Claims 2, 5, 9, 11, 13 and 16. Accordingly, Applicants' respectfully request the Examiner to reconsider and withdraw the rejection of Claims 2-5, 9, 11, 13, and 16 under 35 U.S.C. § 103(a).

E. Rejection of Claim 17 under 35 U.S.C. § 103(a):

The Office Action rejects Claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Gunther and in view of McMinn and further in view of U.S. Patent No. 5,873,053 of Pricer, *et al.* (hereinafter "Pricer"). Applicants' respectfully traverse this rejection in light of the above amendments and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) for the following reasons.

Amended Claim 1 recites the allowable subject matter identified by the Examiner in original Claim 18. Claim 17 depends, either directly or indirectly, from amended Claim 1, and thus, incorporates the allowable subject matter of amended Claim 1. As such, Miller in view of Gunther, and further in view of McMinn and further in view of Pricer does not teach or suggest the subject matter recited in amended Claim 1 and hence the subject matter of Claim 17. Accordingly, Claim 17 is not rendered obvious by Miller in view of Gunther and further in view of McMinn and further in view of Pricer. Accordingly, Applicants' respectfully request the Examiner to reconsider and withdraw the rejection of Claim 17 under 35 U.S.C. § 103(a).

F. Rejection of Claims 6, 10, 12 and 28 under 35 U.S.C. § 103(a):

Claims 6, 10, 12 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Gunther and in view of McMinn and further in view of U.S. Patent No. 6,363,490 of Senyk (hereinafter "Senyk") and U.S. Patent No. 5,291,607 of Ristic, *et al.* (hereinafter "Ristic"). Applicants' respectfully traverse this rejection in light of the above amendments and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) for the following reasons.

Amended Claim 1 recites the allowable subject matter identified by the Examiner in original Claim 18. Claims 6, 10, 12, and 28, depend, either directly or indirectly, from amended Claim 1, and thus incorporate the allowable subject matter of amended Claim 1. As such, Miller in view of Gunther and in view of McMinn and further in view of Senyk and Ristic does not teach or suggest the subject matter recited in amended Claim 1, and, hence, the subject matter recited in Claims 6, 10, 12, and 28. Accordingly, Claims 6, 10, 12 and 28 are not rendered obvious by Miller in view of Gunther in view of McMinn and

further in view of Senyk and Ristic. Accordingly, Applicants' respectfully request the Examiner to reconsider and withdraw the rejection of Claims 6, 10, 12 and 28 under 35 U.S.C. § 103(a).

G. Rejection of Claim 29 under 35 U.S.C. § 103(a):

Clam 29 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Gunther and further in view of U.S. Patent No. 5,838,578 of Pippen (hereinafter "Pippen"). Applicants' respectfully traverse this rejection in light of the above amendments and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) for the following reasons.

Amended Claim 1 recites the allowable subject matter identified by the Examiner in original Claim 18. Claim 29 depends, either directly or indirectly, from amended Claim 1, and thus incorporates the allowable subject matter of amended Claim 1. As such, Miller in view of Gunther and further in view of Pippen does not teach or suggest the subject matter recited in amended Claim 1, and, hence, the subject matter recited in Claim 29. Accordingly, Claim 29 is not rendered obvious by Miller in view of Gunther and further in view of Pippen. Applicants' respectfully request that Examiner to reconsider and withdraw the rejection of Claim 29 under 35 U.S.C. § 103(a).

H. Rejection of Claim 32 under 35 U.S.C. § 103(a):

Claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Gunther. Applicants' respectfully traverse this rejection in light of the above amendments and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) for the following reasons.

Gunther is cited for teaching a means of digitally filtering an output of a thermosensor before determining whether an over temperature condition of the integrated circuit exists. Miller, as discussed above in relation to the rejection of Claim 30, fails to disclose, teach or suggest a controller for monitoring *die temperatures* of an integrated circuit. Gunther fails to cure the factual deficiencies of Miller. The digital filtering of Gunther fails to teach or suggest a controller for monitoring die temperatures of an integrated circuit as recited in amended Claim 30. Claim 32 depends, directly or indirectly from amended Claim 30, and thus incorporates the novel subject matter of

amended Claim 30. As such, Miller in view of Gunther does not teach or suggest the subject matter recited in Claim 32. Hence, Claim 32 is not rendered obvious by Miller in view of Gunther. Accordingly, Applicants' respectfully request the Examiner to reconsider and withdraw the rejection of Claim 32 under 35 U.S.C. § 103(a).

I. Rejection of Claim 37 under 35 U.S.C. § 103(a):

Claim 37 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Gunther. Applicants' respectfully traverse this rejection in light of the above amendments and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) for the following reasons.

Gunther is cited for teaching or suggesting an act of digitally filtering a result of comparing before an act of determining whether an over temperature condition of the integrated circuit exists. As discussed above in detail with regard to the rejection of Claim 35 under 35 U.S.C. § 102, Miller does not disclose a method for monitoring *die temperatures* of an integrated circuit. The digital filtering of Gunther fails to cure the factual deficiencies of Miller. Claim 37 which depends, either directly or indirectly, from amended Claim 35, and thus incorporates the novel subject matter of amended Claim 35. As such, Miller in view of Gunther, alone or in combination, do not teach or suggest the subject matter recited in Claim 37. Accordingly, Claim 37 is not rendered obvious by Miller in view of Gunther. Accordingly, Applicants' respectfully request the Examiner to reconsider and withdraw the rejection of Claim 37 under 35 U.S.C. § 103(a).

J. Rejection of Claims 33 and 34 under 35 U.S.C. § 103(a):

Claims 33 and 34 stand rejected under 35 U.S.C. § 103(a) over Miller in view of U.S. Patent No. 5,291,607 of Ristic, *et al.* (hereinafter "Ristic"). Applicants' respectfully traverse this rejection in light of the above amendments and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) for the following reasons.

The Ristic reference is cited for teaching or suggesting a microprocessor capable of reading the means for receiving a plurality of first values and communicating with the means for determining whether an over temperature condition of the integrated circuit exists. Ristic is further cited for teaching or suggesting that the microprocessor is capable of writing to the means for receiving a plurality of first values and verifies correct

functioning of the controller. The Miller reference, as discussed above in connection with the rejection of Claim 30 under 35 U.S.C. § 102 fails to disclose a controller for monitoring *die temperatures* of an integrated circuit. The microprocessor teaching of Ristic reference fails to bridge the factual deficiencies of the Miller reference. Claims 33 and 34, depend, either directly or indirectly from amended Claim 30, and thus incorporate the novel subject matter of amended Claim 30. As such, Miller in view of Ristic, alone or in combination, do not teach or suggest the subject matter recited in Claim 33 and 34. Hence, neither Claim 33 nor Claim 34 are rendered obvious by Miller in view of Ristic. Accordingly, Applicants' respectfully request the Examiner to reconsider and withdraw the rejection of Claims 33 and 34 under 35 U.S.C. § 103(a).

CONCLUSION

In view of the amendments and remarks set forth above, Applicants contend that this application is in condition for allowance. If the Examiner deems there are any remaining issues, we invite the Examiner to call the undersigned at (617) 227-7400.

Respectfully submitted,

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